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NEW PRODUCTS, NEW TECHNIQUES OF SOVIET
CONSTRUCTION MATERIALS INDUSTRY

NEW BUILDING MATERIALS EXHIBITED IN MOSCOW -- Stalingrad, Stalingradskaya Pravda, 13 Aug 52

Hundreds of enterprises equipped with first-class machinery and equipment have been built by the Soviet construction materials industry during the postwar period.

The development of the glass industry in the USSR in the postwar years made it possible in 1951 to completely meet demands made by growing construction and to organize the production of new types of glass products.

Hollow glass blocks, hygienic and easy-to-handle finished partitions, various glass products, ceramic products such as ceramic blocks, ceramic facing tile of all shapes and designs, and natural stone facing slabs were recently put on exhibit in Moscow as new products of the Soviet construction materials industry.

The use of materials such as decorative rolled glass, decorative frosted glass, colored glass tile for wall facing, and foam glass [peno steklo] has been found to be very effective and practical in building.

The use of glass pipe in constructions is of great value and its production has already been organized widely in a number of glass plants.

Cinder blocks and common red brick or silicate brick are the basic building materials at present. Hollow ceramic blocks were shown at the Moscow exhibit as one of the new building materials. The heat resistance of walls built from such blocks is almost 1.5 times higher than that of walls built from common brick. In addition, the use of these blocks makes it possible to reduce the thickness of the wall by 1.5 times.

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Besides ceramic facing tile, concrete slabs, colored silicate slabs and hollow ceramic facing blocks made from light clay have been used as facing materials in the building projects of Moscow for facing building fronts. The wide use of these materials has made it possible to eliminate completely the use of wet plaster, which in the past has been the basic material used for the facing of building exteriors.

The new facing materials make it possible to face the wall at the same time it is being erected as well as to give it a beautiful and long-lasting appearance.

Facing with natural stone slabs is already beginning to take a prominent place in Moscow and other cities, especially for tall structures. Both the extraction and processing of the raw stone have been extensively mechanized.

COARSELY POROUS, SANDLESS CONCRETE DEVELOPED -- Petrozavodsk, Leninskoye Znamya, 13 Sep 52

Coarsely porous, sandless concrete is one of the newest construction materials developed in the USSR. The product was first used in 1950 in the construction of dwellings and single and multistoried industrial buildings on the Caucasian and Crimean coasts of the Black Sea.

Unlike ordinary concrete, which consists of gravel or crushed rock, sand and cement, coarsely porous sandless concrete contains no sand for a filler but consists of gravel or crushed rock 5-20 millimeters in size bonded by a cement mass. A fixed amount of the cement mass, which covers the gravel or crushed rock particles and binds them together, forms the material for structures made from coarsely porous concrete.

In contrast to walls made from natural stone joined by ordinary mortar, walls made from this new type of concrete conduct considerably less heat; this fact makes it possible to build a wall similar in thickness to one built from brick.

The strength of coarsely porous concrete as a wall-building material is sufficient to build buildings up to three stories high. As to the adaptation and use of the concrete, institutions of the State Committee for Construction permit this material to be used even in those regions which are subject to earthquakes.

Coarsely porous concrete has definitely proved itself under actual conditions of use. As time passes, the strength of the wall increases, and walls built from this material last as long as those made from ordinary concrete. Furthermore, a smaller amount of scarce materials is required to produce this concrete than ordinary, slag, or rubblestone concrete.

Where gravel and crushed rock are the local raw materials used in concrete, it has been estimated that a square meter of wall built from coarsely porous concrete is 30 percent cheaper than a square meter of rubblestone concrete wall and 40 percent cheaper than a square meter of brick wall.

Recent experiments in substituting the scarce coarsely porous concrete for such important materials as lime, gypsum, or bitumen binding material, which are even scarcer, have revealed the possibility of even greater savings as a result of its use in building.

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Numerous rubble pits are located on the shores of the Black Sea and coarsely porous concrete was first used in the southern part of the USSR. However, inexhaustible supplies of natural stone and gravel are also found in the Karelo-Finnish SSR. The new type of concrete was first used in the north in Murmansk Oblast in the summer of 1951. Buildings constructed from this concrete have been found to be of good quality. In 1952, use of this material became even more widespread.

ADD ASPHALT IN CERAMIC PIPE MANUFACTURING -- Kishinev, Sovetskaya Moldaviya, 2 Dec 52

The Kishinev Architectural Ceramics Plant, in collaboration with the republic's construction materials laboratory, has carried out experiments in adding asphalt to easily fusible clay in the manufacture of ceramic sewer pipes.

The experimental pipes, impregnated with asphalt, have been found to be considerably improved in quality. Water absorbability has been decreased from 16 to 4 percent, while acid resistance has been increased by 10-12 percent over that of tile. In addition, mechanical strength is much higher.

Whereas pipes made from ordinary clay withstand an external stress up to 3,300 kilograms per linear meter, the asphalt-impregnated pipes are able to withstand a stress up to 5,400 kilograms per linear meter. Their strength under hydraulic pressure has been increased from 4 to 10 and even to 12 atmospheres.

TO USE "PENOSILIKAT" BLOCKS ON MAIN TURKMEN CANAL -- Ashkhabad, Turkmenskaya Iskra, 23 Sep 52

"Penosilikat" is a new construction material which is strong and has good sound- and heat-resistant qualities. Fine-grained sand and lime are used as the raw materials in its manufacture.

The manufacture of "penosilikat" products involves the preparation of a mixture containing finely ground sand, lime, and water, to which mixture a foaming agent is added. The substance is mixed in an ordinary agitator. Waste products from a meat combine or products of saponification of naphthenic acid are used as the foaming agent.

The foaming sand-lime mixture is poured into metal forms of various sizes and allowed to harden in the forms. When the required hardness of the blocks has been obtained, the blocks are put into an autoclave where they are acted on by steam under a pressure of 8-12 atmospheres. The hardening process in the autoclave lasts 14-16 hours. After the blocks have been thus treated in the autoclave, they are removed from the metal forms and delivered to warehouses as finished products.

FERROALLOY PLANT MANUFACTURES WHITE DECORATIVE BRICK -- Tbilisi, Zarya Vostoka, 1 Oct 52

In 1949 - 1950, the Zestafoni Ferroalloy Plant developed and started producing a new decorative building material, white brick made from lime and "broliskedskiy spongolit" [a local spongy grout].

Because of the critical need for qualitative wall-building material in the Kutaisi Oblast of Georgian SSR, it will be necessary to build a "spongolitniy" brick plant with a capacity of at least 100 million bricks per year in the area of the raw material.

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DANILOV ALABASTER PLANT TO MANUFACTURE NEW FINISHING MATERIAL -- Moscow, Vechernyaya Moskva, 14 Aug 52

The Danilov Alabaster Plant will soon start manufacturing a new wall-finishing material, plasterboard made from gypsum-fiber solution. The plant expects to set up an experimental shop for this purpose. The equipment has already been assembled and a special kiln will be constructed.

The first samples of the new product, 3- x 1.5-meter panels, have already been manufactured. The thickness depends on the purpose for which the product is to be used and measures 10-20 millimeters.

NEW METHOD DEVELOPED FOR SILICATE BRICK MANUFACTURING - Minsk, Sovetskaya Belorussiya, 18 Jul 52

The Scientific Research Institute of the Ministry of Construction Materials Industry, Belorussian SSR, has developed a new method for manufacturing silicate brick. The new method eliminates the preliminary slaking of the lime and speeds up the brick-wetting process.

According to the new method, the finely ground sand is not added to the mass separately but as part of a lime mixture in the form of a finely ground lime-sand powder.

Manufacture of silicate brick according to this method involves the mixing of 4-12 percent lime with a small quantity of sand (4-10 percent) and attaining a fineness of the lime-sand powder sufficiently fine to pass through a sieve. The lime-sand powder which has passed through a sieve is then mixed with water and the remaining sand in an ordinary agitator. After passing through a damping drum, it goes to the press.

ESTONIAN PLANT USES CEMENT SUBSTITUTE -- Tallin, Sovetskaya Estoniya, 7 Aug 52

The Estonian Silicate Brick Plant "Quartz" has developed white silicate tile for roofing. The tile is made from lime rather than cement, which is difficult to obtain, and is equal in quality to tile made from sand and cement. Excellent results have been obtained from latest experiments made on producing reinforced and nonreinforced structures from the silicate solution.

FIELD STONE A SOURCE OF LIME IN LATVIAN AGRICULTURAL ARTELS -- Riga, Sovetskaya Latvya, 15 Aug 52

The agricultural artels imeni Zhdanov, imeni Voroshilov, and "Molodaya Gvardiya" have been gathering up the limestone found scattered in their meadows and fields. The limestone is processed in the lime plants located in the areas of the artels.

Thus the kolkhoz plants are completely able to meet their requirements for lime needed in constructions in the artels. It is also planned to kiln more lime for use in liming acid soils.

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